

Docket No. 218296US2SCONT/smc

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Tomoyuki HATTORI, et al.  
SERIAL NO: 10/053,704  
FILED: January 24, 2002  
FOR: PERMANENT MAGNET TYPE ELECTRIC MOTOR

GAU: 2834

EXAMINER:

**INFORMATION DISCLOSURE/RELATED CASE STATEMENT UNDER 37 CFR 1.97**

ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

SIR:

Applicant(s) wish to disclose the following information.

**REFERENCES**

- ☒ The applicant(s) wish to make of record the references, some of which are cited in the attached International Search Report listed on the attached form PTO-1449. Copies of the listed references are attached, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.
- ☐ A check is attached in the amount required under 37 CFR §1.17(p).

**RELATED CASES**

- ☒ Attached is a list of applicant's pending application(s) or issued patent(s) which may be related to the present application. A copy of the patent(s), together with a copy of the claims and drawings of the pending application(s) is attached along with PTO 1449.
- ☐ A check is attached in the amount required under 37 CFR §1.17(p).

**CERTIFICATION**

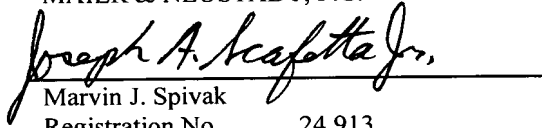
- ☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

**DEPOSIT ACCOUNT**

- ☒ Please charge any additional fees for the papers being filed herewith and for which no check is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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### LIST OF RELATED CASES

<u>Docket Number</u>	<u>Serial or Patent No.</u>	<u>Filing or Issue Date</u>	<u>Status or Patentee</u>
0039-6721-2	6,087,751	07/11/00	SAKAI
0039-7383-2	6,274,960	08/14/01	SAKAI et al.
0039-7569-2	6,329,734	12/11/01	TAKAHASHI et al.
0039-7659-3	6,268,677	07/31/01	TAKABATAKE et al.
196987US2 DIV	6,342,745	01/29/02	SAKAI et al.
218296US2S CONT*	10/053,704	01/24/02	PENDING

\*Present application; listed for information

GJM/ae

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Sheet 1 of 1

SERIAL NO: 10/053,704

Group Art Unit: 2834



STATEMENT OF RELEVANCY

**Reference ~~AW~~ on Form 1449:**

This reference shows reluctance motor and permanent magnet motors for variable-frequency drives. (pp. 742, Fig. 1, pp. 743, Fig. 4)

**Reference AX on Form 1449:**

This reference shows a permanent magnet motor operated in a wide speed range (pp. 3, Fig. 1, pp. 6, Fig. 8)

**Reference AY on Form 1449:**

This reference shows a synchronous reluctance motor with the multiple-barrier rotor.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP01/04326

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl<sup>7</sup> H02K19/10

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
Int.Cl<sup>7</sup> H02K19/10, 21/14, 1/27Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Jitsuyo Shinan Koho 1926-1996 Jitsuyo Shinan Toroku Koho 1996-2001  
Kokai Jitsuyo Shinan Koho 1971-2001 Toroku Jitsuyo Shinan Koho 1994-2001

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y Y A	EP 889574 A1 (KABUSHIKI KAISHA TOSHIBA), 07 January, 1999 (07.01.99), Column 40, lines 46 to 52; Fig. 37 Column 20, lines 19 to 48; Fig. 2 Full text; Figs. 1 to 38 & JP 11-27913 A, Par. No. [0018]; Figs. 1-2 & US 6087751 A & JP 11-136890 A, full text; Figs. 1-13 & JP 11-136912 A, full text; Figs. 1-12	1-2, 8, 10, 11 3 9
Y	US 6008559 A (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.), 28 December, 1999 (28.12.99), Column 4, lines 23 to 29; Column 5, lines 9 to 26; Fig. 1 & JP 11-98731 A, Par. Nos. [0030], [0038] & CN 1267943 A	1-3, 8, 11
Y	EP 1014541 A1 (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.), 28 June, 2000 (28.06.00), Column 5, line 51 to Column 6, line 9; Fig. 1 & JP 11-146584 A, Par. No. [0022]; Fig. 1 & WO 99/013556 A & CN 1269919 T	1-3, 8, 11

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

\* Special categories of cited documents:  
 "A" document defining the general state of the art which is not considered to be of particular relevance  
 "E" earlier document but published on or after the international filing date  
 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  
 "O" document referring to an oral disclosure, use, exhibition or other means  
 "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art  
 "&" document member of the same patent family

Date of the actual completion of the international search  
20 August, 2001 (20.08.01)Date of mailing of the international search report  
04 September, 2001 (04.09.01)Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP01/04326

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 11-18328 A (AISIN AW CO., LTD), 22 January, 1999 (22.01.99), Par. No. [0031]; Figs. 1 to 6 (Family: none)	10, 11
A	US 4924130 A (ANTONINO FRATTA), 08 May, 1990 (08.05.90), Column 5, lines 7 to 38; Figs. 3 to 4 & DE 68911570 D & EP 338610 A & IT 1219228 B & US 4924130 A & AT 99092 T & ES 2048270 A	1-3, 8-11

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP01/04326

**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 4,5,6,7  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:  
  
When the formula in claim 4 is modified to leave  $W_{\text{dmin}}$  only as a left side member and the number of poles is taken as eight, the right side gives about  $51R$  ( $W_{\text{dmin}} \geq 51R$ ), meaning that a minimum distance  $W_{\text{dmin}}$  between a cavity and a permanent magnet is at least 51 times the rotor radius  $R$ . However, since it is evident that  $W_{\text{dmin}}$  is smaller than  $R$ , the description in claim 4 is considered to be unclear. Similarly, the descriptions in claims 5-7 are also unclear.
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.